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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/982,794
Filing Date: October 22, 2001
Appellant(s): NI, SHIH-HSIUNG

William G. Hughes
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/10/09 appealing from the Office action mailed 7/11/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

However, **Appellant presumed** that since the amendments after the final office action were entered, the 35 U.S.C. 112 second paragraph rejections presented in the previous office action was withdrawn. Examiner respectfully disagrees.

The amendments were entered because it merely provided and/or corrected antecedent basis for the recited limitation. The 35 U.S.C. 112 second paragraph rejections **still stands** and **have not** been withdrawn. Moreover, examiner neither acknowledged nor indicated such a withdrawal.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. However, Appellant's has failed to address the 35 U.S.C. 112, 2nd paragraph rejections presented in the Final office Action. This rejection stands as is.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Thompson Michael I., EP 0572145 A2 published on Dec. 1, 1993.

Scott, US 6,512,773 B1, filed on Dec., 30, 1998, and issued on Jan. 28, 2003.

Parruck et al., US 7,139,271 B1, filed on Oct. 12, 2001, and issued on Nov. 21, 2006.

Yik et al., US 6,697,873 B1, filed on Aug. 22, 2000, and issued on Feb. 24, 2004.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is reproduced herein:

> A network device configured to prevent data misalignment of a data packet containing extra header bytes, the network device comprising:

an ingress module having an input interface to receive a data packet comprising a plurality of cells wherein the a header cell of the data packet is one of the plurality of cells of the data packet, wherein the header cell of the plurality of cells comprises a header and packet data information and wherein the header cell includes the header in its entirety for the data packet;

a header detector configured to detect the header cell of the data packet and remove the header from the header cell of the data packet;

a counter configured to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell;

an insertion module configured to insert null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes…; and

an extraction module configured to remove the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network

Applicant's Background Information discloses:

[0004] A packet is a unit of data that is routed between a source and a destination network over the Internet or any other packet-switched network...when any file (i.e. email message, html file...) is sent from...via the Internet, the TCP/IP may divide the file into packets...

[0005] A packet, in general, loosely defines a block of variable-length data. Thus, packet switching scheme may be an efficient way to handle transmissions...In comparison, a cell, in the network terminology, is a fixed-length of data as opposed to variable-length of data. Cells are basic unit of data transport used in protocols, such as ATM…

In light of these teachings, it is unclear whether the "data packet comprising plurality of cells, wherein a header cell of the data packet is one of the plurality of cells of the data packet, wherein the header cell of the plurality of cells comprises a header and packet data information and wherein the header cell includes the header in its entirety for the data packet" is with respect to data packets in packet switching environment, Ethernet OR ATM environment, which comprises cell-based switching environment, **thus enabling the scope of the claim unascertainable.**

The teachings of packet-based receiving and cell-based receiving are distinct in the art, as evidenced by the applicant specification.

More specifically, it is unclear whether the receiving is with respect to full data packet and/or data packet which are divided into cells and received as cells.

Applicant is advised to take appropriate action.

Claims 2-13 are rejected for the same reasons as set forth in claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2) in view of Scott (U. S. Patent No. 6,512,773 B1), and further in view of Parruck et al. (hereinafter Parruck, U. S. Patent No. 7,139,271 B1).

As per claim 1, Thompson discloses a network device configured to prevent data misalignment of a data packet containing extra header bytes (col. 1 L25-38), the network device comprising:

an ingress module having an input interface to receive the data packet, wherein the data packet comprises a header and packet data information (col. 1 L25-30, col. 11 L26-32, applicant admitted prior art, AAPA, pg. 4 [0008]);

a header detector configured to detect a header of the data packet and remove the header from the data packet (col. 11 L51 to col. 12 L10, AAPA pg. 4 [0008]: conventional data packet includes one header for the entire data packet);

an insertion module configured to insert null bytes into the header of the data packet to form a modified data packet if the CPU determines that the header/data split is not on an even byte boundary in order to align data packet (i.e. the number of bytes contained in data portion is

even, multiple of predetermined bytes is an even number or odd, and the alignment must be corrected by processor 15 by inserting null bytes into the header of the cell (col. 12 L28-36, col. 1 L25-34; col. 5 L10-15, L29-37; fig 9; col. 4 L34-37: i.e. if the header/data split is not even, pad bytes or null bytes are inserted to correct the alignment)); and

an extraction module configured to remove the null bytes from the modified header of the data packet as a modified data packet exits the network device (col. 6 L35-46).

However, Thompson does not disclose a data packet comprising a plurality of cells, wherein a header cell of the data packet is one of the plurality of cells of the data packet and wherein the header cell of the plurality of cells comprises a header and packet data portion (i.e. a typical ATM environment, wherein the data packet is segmented into plurality of smaller pieces known as ATM cells) and a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell.

Scott discloses a network device comprising: an ingress module having an input interface to receive a cell of the data packet (col. 10 L15-21); an egress module having output interface to output the cells (col. 10 L27-30); a header detector configured to detect a header of the cell of the data packet and remove the header from the cell of the data packet (col. 10 L22-23, L54-55); a counter to determine and/or count the number of octets of the user data PDU of the payload; and an insertion module that adds pad characters to make the frame or cell equal an integer number of 48 octet cells in order to align cells of the data packet (i.e. inserting null bytes if the frame or cell does not satisfy an integer number of 48 octet i.e. if it does not satisfy the multiple number of the predetermined number of bytes, an even number, col. 10 L40-50, fig. 5C item #236).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scott, in order to include a counter that determines whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed (i.e. a counter that counts number of bytes in the cell of the data packet), since Scott teaches and discloses a counter that counts data octets of the user data PDU of the payload and adding pad characters to make the frame equal an integer number of an even number of 48 octet cells.

One of ordinary skilled in the art would have been motivated because it would have determined and/or counted the number of bytes in a cell (Scott, col. 10 L40-50) and based on the determination it would have inserted the pad byte into the cell in order to align the headers and the cell (Thompson, col. 1 L25-38).

However, Thompson in view of Scott does not disclose a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data information and wherein the header cell includes the header in its entirety for the data packet (please note: Scott inherently discloses the limitation because Scott is related to ATM networks, however, in order to establish a proper prima facie case, Parruck has been introduced).

Parruck explicitly discloses a data packet comprising a plurality of cells, wherein the header cell of the data packet is one of the plurality of cells of the data packet, wherein the header cell of the plurality of cells comprises header and packet data information (col. 1 L64 to col. 2 L9, col. 11 L5-19, col. 17 L6-64, fig. 20, col. 25 L58 to col. 26 L43: i.e. Parruck discloses preventing misalignment in ATM networks, wherein ATM network is a cell-based routing

network and MPLS network), and wherein the header cell includes the header in its entirety for the data packet (fig. 41, col. 1 L64 to col. 2 L10, fig. 60J, 60H) [note that applicant's invention either utilizes packet switching scheme and/or cell-based switching scheme, and Parruck teaches both of these schemes or environment, e.g. col. 1 L26 to col. 2 L9, col. 4 L5-58).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scot and further in view of Parruck, in order to prevent misalignment in an ATM networks.

One of ordinary skilled in the art would have been motivated because it would have prevented misalignment of the data packet and/or header cell in an ATM network (Parruck, col. 30 L49 to col. 31 L17).

As per claim 2, Thompson in view of Scott and further in view of Parruck discloses the network device wherein the network device comprises an aggregator that interfaces with an Ethernet and a SPI-4 system (Parruck, col. 31 L20-56, fig. 1, fig. 4, fig. 27). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 3, Thompson in view of Scott and further in view of Parruck discloses the network device configured to interface between twelve 1-gigabit ports and one 12 Gigabit/s SPI-4 interface (Parruck, col. 31 L20-56, fig. 1, fig. 4, fig. 27: please note the port speed and uplink speed may vary, however various modules are available with various speeds or bandwidth). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 4, Thompson in view of Scott and further in view of Parruck discloses the system wherein the network device is a network switch (Parruck, fig. 2, fig. 4, fig. 9, col. 10 L1-

25). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 6, Thompson further discloses forwarding the modified cell of the data packet to an output port (col. 6 L30-46). Therefore, claim 6 is rejected for the same reasons as set forth in claim 1 above.

As per claims 7, 8 and 10-12, they do not teach or further define over the limitations in claims 1-4 and 6. Therefore, claims 7, 8 and 10-12 are rejected for the same reasons as set forth in claims 1-4 and 6.

Claims 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2) in view of Scott (U. S. Patent No. 6,512,773 B1), further in view of Parruck et al. (hereinafter Parruck, U. S. Patent No. 7,139,271 B1), and further in view of Yik et al. (U. S. Patent No. 6,697,873 B1).

As per claim 5, Thompson, Scott and Parruck disclose the network device comprising a layer two switching module configured to build a table of forwarding rules (Parruck, Parruck, fig. 2, fig. 4, fig. 9, col. 10 L1-25) and configured to instruct the extraction module to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device (Thompson, col. 6 L35-46; Parruck, col. 1 L64 to col. 2 L9, col. 11 L5-19, col. 17 L6-64, col. 25 L58 to col. 26 L43), however, Thompson, Scott and Parruck does not disclose a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet and a layer two switching module configured to build a table of forwarding rules upon which the MAC addresses exist.

Yik explicitly discloses an apparatus comprising a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet and a frame-forwarding device including MAC address tables (i.e. a layer two switching module building a forwarding table based on MAC addresses, see abstract, fig. 2, fig. 6, fig. 7A and col. 2L20-31, col. 4 L33-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Yik as stated above with Thompson, Scott and Parruck in order to include a MAC module for transmitting the modified cell of the data packet and a layer two switching module for building a forwarding table.

One of ordinary skilled in the art would have been motivated because it would have increased the performance of the network by forwarding the frames to the correct output port associated with the particular MAC address (Yik, col. 2 L20-31).

As per claim 9 and 13, they do not teach or further define over the limitations in claim 5. Therefore, claims 9 and 13 are rejected for the same reasons as set forth in claim 5.

(10) Response to Argument

Examiner summarizes various issues and/or arguments raised by the appellant and addresses each of them separately.

In the Appeal Brief (hereinafter The Brief), appellant argues in substance that:

a. Applicant disagrees that Scott discloses determining whether the header cell of a data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell, as recited in claim 1 (The Brief, pg. 14: 1-2nd paragraph, pg. 19, pg. 20).

In response to argument [a], Examiner respectfully disagrees.

Before addressing the appellant's arguments, A brief review of the prior art rejection, the prior art and the rationale for the combination is presented herein.

Independent claim 1 recites:

A network device configured to prevent data misalignment of a data packet containing extra header bytes, the network device comprising:

an ingress module having an input interface to receive a data packet comprising a plurality of cells wherein a header cell of the data packet is one of the plurality of cells of the data packet, wherein the header cell of the plurality of cells comprises a header and packet data information and wherein the header cell includes the header in its entirety for the data packet;

a header detector configured to detect the header cell of the data packet and remove the header from the header cell of the data packet;

a counter configured to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell;

an insertion module configured to insert null bytes into the header cell of the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes…; and

an extraction module configured to remove the null bytes from the modified header cell of the data packet as a modified cell of the data packet exits the network

Independent claim 1, 6 and 10 stands rejected as follows:

As per claim 1, Thompson discloses a network device configured to prevent data misalignment of a data packet containing extra header bytes (col. 1 L25-38), the network device comprising:

an ingress module having an input interface to receive the data packet, wherein the data packet comprises a header and packet data information (col. 1 L25-30, col. 11 L26-32, applicant admitted prior art, AAPA, pg. 4 [0008]);

a header detector configured to detect a header of the data packet and remove the header from the data packet (col. 11 L51 to col. 12 L10, AAPA pg. 4 [0008]);

an insertion module configured to insert null bytes into the header of the data packet to form a modified data packet if the CPU determines that the header/data split is not on an even byte boundary (i.e. the number of bytes contained in data portion is even, multiple of predetermined bytes is an even number or odd, and the alignment must be corrected by processor 15 by inserting null bytes into the header of the

cell (col. 12 L28-36, col. 1 L25-34; col. 5 L10-15, L29-37; fig 9; col. 4 L34-37: i.e. if the header/data split is not even, pad bytes or null bytes are inserted to correct the alignment)); and

an extraction module configured to remove the null bytes from the modified header of the data packet as a modified data packet exits the network device (col. 6 L35-46).

However, Thompson does not disclose a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data portion (i.e. a typical ATM environment) and a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell.

Scott, from the same field of endeavor discloses a network device comprising: an ingress module having an input interface to receive a cell of the data packet (col. 10 L15-21); an egress module having output interface to output the cells (col. 10 L27-30); a header detector configured to detect a header of the cell of the data packet and remove the header from the cell of the data packet (col. 10 L22-23, L54-55); a counter to determine and/or count the number of octets of the user data PDU of the payload; and an insertion module that adds pad characters to make the frame or cell equal an integer number of 48 octet cells (i.e. inserting null bytes if the frame or cell does not satisfy an integer number of 48 octet i.e. if it does not satisfy the multiple number of the predetermined number of bytes, an even number, col. 10 L40-50, fig. 5C item #236).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scott, in order to include a counter that determines whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed (i.e. a counter that counts number of bytes in the cell of the data packet), since Scott teaches and discloses a counter that counts data octets of the user data PDU of the payload and adding pad characters to make the frame equal an integer number of an even number of 48 octet cells.

One of ordinary skilled in the art would have been motivated because it would have determined and/or counted the number of bytes in a cell (Scott, col. 10 L40-50) and based on the determination it would have inserted the pad byte into the cell in order to align the headers and the cell (Thompson, col. 1 L25-38).

However, Thompson in view of Scott does not disclose a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data information and wherein the header cell includes header in its entirety for the data packet (please note: Scott inherently discloses the limitation because Scott is related to ATM networks, however, in order to establish the proper prima facie case, Parruck has been introduced).

Parruck, from the same field of endeavor explicitly discloses a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises header and packet data information, wherein the header cell includes the header in its entirety for the data packet (col. 1 L64 to col. 2 L9, col. 11 L5-19, col. 17 L6-64, col. 25 L58 to col. 26 L43: i.e. Parruck discloses preventing misalignment in ATM networks and MPLS network, fig. 41-42: Switch packet comprising switch header, i.e. header cell and plurality of data cells).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scot and further in view of Parruck, in order to prevent misalignment in an ATM networks.

One of ordinary skilled in the art would have been motivated because it would have prevented misalignment of the data packet and/or header cell in an ATM network (Parruck, col. 30 L49 to col. 31 L17).

Thompson and The process of Preventing Data Misalignment

Initially, Thompson discloses a network device configured to prevent data misalignment of a data packet containing extra header bytes (See col. 1 L25-38), **as acknowledged by the appellant in the prosecution, E.g. See remarks filed 4/10/2008, pg. 11-12.**

Moreover, Thompson teaches the process of receiving a data packet having header and data portion, i.e. **a typical Ethernet data packet**, removing the header off the data packet and performing alignment of network header by inserting the pad or null bytes in the header to cause the header in the network packet to be aligned along predetermined multi-byte boundaries, i.e. adding pad bytes when it is determined that the header cell, i.e. cell does not satisfy the predetermined multi-byte boundaries (thus, resulting in a modified header) (col. 1 L25-54, col. 3

L1 to col. 4 L50), **as explicitly acknowledged by the appellant in the prosecution, See remarks filed 4/10/08, pg. 11-12.**

As indicated in the rejection, Thompson practices the invention in a network environment such as network 30 (col. 1 L25-54, fig. 2), which may be a typical Ethernet environment with Ethernet data packets.

However, Thompson does not disclose the system wherein the network 30 is an **ATM network, which is explicitly known to utilize cell-based routing of data packets.**

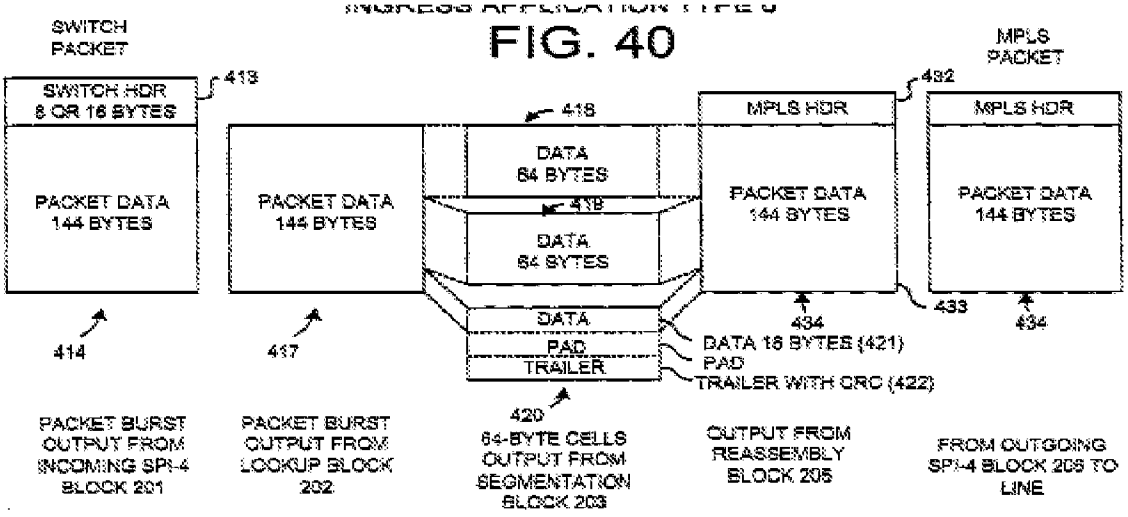
Parruck et al. and The ATM Network and/or protocol OR The Packet-switched network

Parruck utilizes packet-switching and/or cell-based lower level protocol for transporting IP packets over a network, wherein the protocol is the Asynchronous Transfer Mode (ATM) (See col.1 L25-66), **as acknowledged by the appellant in the prosecution, See remarks filed 4/10/08, pg. 13, 2nd paragraph.**

In ATM, all packets are of equal length. They are therefore called "cells". **A large IP packet is transported over an ATM network by segmenting the large IP packet into a plurality of smaller pieces, i.e. dividing the packets into plurality of cells.** Each of smaller pieces is packaged to become an ATM cell. The ATM cells are then transported across the ATM network. When the ATM cells reach the edge of the ATM network, **their payloads are reassembled to reform the large IP packet** (Parruck, col. 1 L64 to col. 2 L10).

An IP packet includes a single header for the entire data packet comprising plurality of cells as shown in the reproduced figure below, i.e. header in its entirety for the data packet.

For example: item #414, 417, 420 and 434 [See Also applicant's fig. 3A step #205 and 210 for comparison purposes].



At column 17 lines 5-64, Parruck discloses the process of receiving an ATM cell, wherein the ATM cell includes an ATM header 309 and a data payload 311.

In other words, Parruck discloses a network device, such as a router/switch (fig. 1, fig. 2 and fig. 4, col. 2 L37-57), wherein the data packet comprising plurality of cells are received, and wherein a header cell of the data packet is one of the plurality of cells of the data packet, i.e. header cell is equivalent to a cell of a data packet, and wherein the header cell of the plurality of cells comprises a header and packet data information, see col. 17 L6-64 and fig. 20, and wherein the header cell includes the header in its entirety for the data packet, for example: fig. 41 item #414 and 418.

In other words, a switch packet, i.e. a data packet, comprises plurality of cells including the header cell in its entirety, i.e. a single header for the data packet comprising 64 byte cells.

Moreover, "a data packet comprising plurality of cells…wherein...wherein...and wherein..." is utilized **in either ATM network and/or packet-switched network such as Ethernet**, Fast Ethernet, etc., which are explicitly disclosed in the combination of Thompson and Parruck as set forth above **[See Also, Applicant's Field of Invention [0002]].**

Scott et al. and The Counter

Thompson teaches and discloses the process of receiving a data packet having header and data portion, removing the header off the data packet and performing alignment of network header by inserting the pad or null bytes in the header to cause the header in the network packet to be aligned along predetermined multi-byte boundaries, i.e. adding pad bytes when it is determined that the header cell, i.e. cell does not satisfy the predetermined multi-byte boundaries.

Stated another way, Thompson, initially, does suggest the usage of a counter that determines whether the header cell of the data packet contains and/or satisfies the predetermined multi-byte boundaries through the process of performing alignment of network header by inserting the pad or null bytes in the header to cause the header in the network packet to be aligned along predetermined multi-byte boundaries.

Scott discloses a network device comprising:

an ingress module having an input interface to receive a cell of the data packet (col. 10 L15-21);

an egress module having output interface to output the cells (col. 10 L27-30);

a header detector configured to detect a header of the cell of the data packet and remove the header from the cell of the data packet (col. 10 L22-23, L54-55);

a counter to determine and/or count the number of octets of the user data PDU of the payload; and

an insertion module that adds pad characters to make the frame or cell equal an integer number of 48 octet cells (i.e. inserting null bytes if the frame or cell does not satisfy an integer number of 48 octet i.e. if it does not satisfy the multiple number of the predetermined number of bytes, an even number, col. 10 L40-50, fig. 5C item #236).

In other words, Scott teaches and discloses a counter as in claims 1-13.

Modification and/or Rationale for the combination

By applying the combination of Thompson and Scott to a system and network as in Parruck, i.e. applying Thompson and Scott to a network environment such as ATM network/protocol and/or to a packet-based switching environment, the combination would result in a process of inserting null bytes into the header cell including header in its entirety for the data packet to form a modified header cell of the data packet if the counter determines that the header cell of the data packet does not satisfy the multiple of the predetermined number of bytes and removing the null bytes from the modified header cell of the data packet as a modified cell of the data packet exists the network device.

See KSR International Co. v. Teleflex Inc., 550 U.S. ___,___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid

down in Graham. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit, and **MPEP 2143.** [EXEMPLARY RATIONALES:

Exemplary rationales that may support a conclusion of obviousness include:
(A) Combining prior art elements according to known methods to yield predictable results;
(B) Simple substitution of one known element for another to obtain predictable results;
(C) Use of known technique to improve similar devices (methods, or products) in the same way;
(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
(E) "Obvious to try" – choosing from a finite number of identified, predictable;
(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. See MPEP § 2143 for a discussion of the rationales listed above along with examples illustrating how the cited rationales may be used to support a finding of obviousness].

In the Brief, for example: pgs. 14-15, appellant asserts that:

"Column 10, lines 40-50 of Scott discloses:

> "(i)n block 231, the payload (105a of FIG. 4A) is processed from the frame 100. The number of octets of the **user data** PDU 71 **of the payload is counted** in block 232. This value forms the length field of the AAL5 CS. **Note that the user data** PDU 71 is **the field found after the 4-octet ATM header field 91 of FIG. 4A.** Block 234 forms the W and CPI fields of the AAL5 frame. For the case where the UU and CPI field are not included in the header or trailer, the default "0" is used. **Block 236 adds pad characters to make the AAL5 frame equal an integer number of 48 octet cells.** In block 237, the 32 bit cyclic redundancy check (CRC) of the AAL5 frame is calculated. Block 238 segments the above AAL5 frame into an integer number of 48 octet cells."

As can be clearly observed from column 10, lines 40-50 of Scott the only part of the frame 100 that is "counted" is the "User Data PDU" (i.e,. 71) portion of the payload 105a. In other words, the "4 octet ATM header" (i.e., 91) is not part of the counting operation performed by Scott. The only counting performed in Scott is counting on the number of octets of the user data included in the payload 71. The number of octets is used for the length field of the ATM adaptation layer-5 convergence sub-layer (AAL5 CS). The counting of the data octets in the payload is again reinforced in operation 232 of FIG. 5C. Once the segmentation of the 48 octet cells of data are prepared, then the 4 octet ATM header is extracted from the frame and HEC is added to create the 5 octet ATM header. The 5 octet ATM header is then combined with the 48 octet payload to create a conventional 53 octet ATM cell (operation 244).

Scott does not disclose using a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell. The only operations that Scott performs after the header is extracted in operation 239 of FIG. 5C is adding the HEC to the header, adding the header back to the 48 octet payload, and appending a "last cell indicator" for the last cell (see operations 239- 244 of FIG. 5C). Therefore, Scott does not disclose or suggest "a counter configured to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell," as recited, in part, in independent claim 1 and similarly in independent claims 6 and 10."

Initially, appellant clearly admits that Scott's counter counts the User PDU portion of the payload 105a, i.e. section 71 of the following figure.

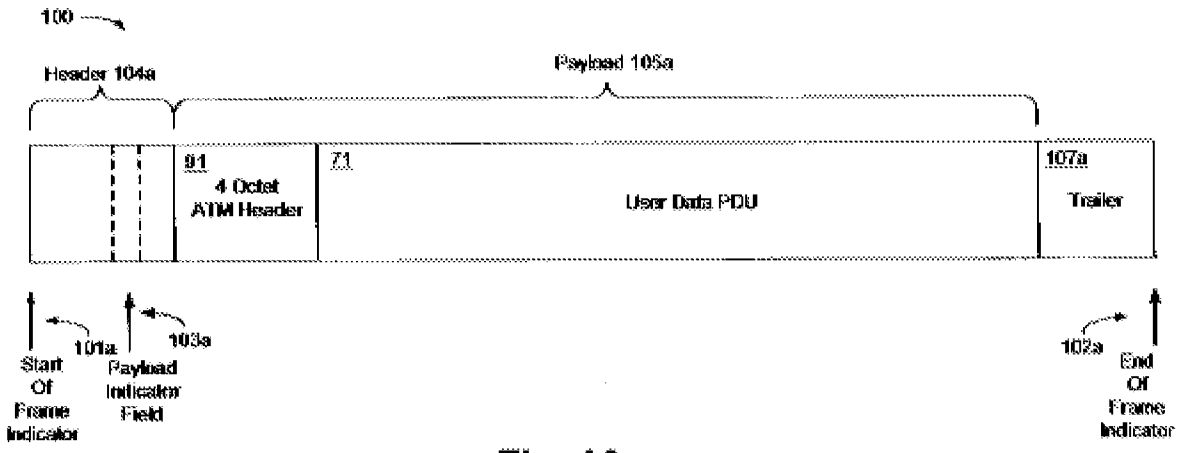


Fig. 4A

In other words, the counter determines whether the User Data PDU section of the packet, i.e. section 71 of the packet contains the multiple of predetermined number of bytes, in this case, 48 octets, which is a multiple of predetermined number of bytes, obtained from AAL5 frame indication, and in an event the User Data PDU is not 48 octet payload, block 236 adds pads characters to make AAL5 frame equal an integer number of 48 octet cells.

Scott further discloses:

FIG. 3A is a schematic view illustrating the manner in which a standard ATM communication frame 81 is developed. Data PDU 71, which is illustratively equivalent to data PDU 21 of FIG. 1, contains user data that is to be transported between computing device 17 and backend network 26 (FIG. 1) via remote transceiver 18 and central transceiver 14 (FIG. 1). Remote transceiver 18 performs a SAR (segmentation and reassembly) function as known to those skilled in the art. The SAR function is illustrated as follows.

Data PDU 71 may include, for example but not limited to, PPP frames, MAC frames, IP (Internet protocol) packets, real-time voice, real-time video, etc. View 72 illustrates data PDU 71 carried via AAL type 5, in which a pad 74 of 0–47 octets has been appended in order to produce a total frame size that is an even multiple of 48 octets. Also appended is an eight octet trailer 76, which (in the case of AAL5) includes a two octet length field, one UU (user-to-user) octet, one CPI (common part indicator) octet, and a four octet cyclic redundancy check (CRC) field.

As illustrated in view 77, the resulting frame 72 is then segmented into 48 octet cells 78 and in view 81, a five octet ATM header 79 is added to each 48 octet cell 78 in order to form the 53 octet ATM cell 82.

In other words, the total frame size, i.e. cell size, must be an even multiple of 48 Octets. In order to achieve the even multiple of 48 Octets, the counter, as set forth above, counts the PDU portion of the packet to determine whether the PDU portion is equal to even multiple of 48 Octets or is equal to 48 octets. In an event the PDU portion is not equal to even multiple of 48 octets, the insertion module adds the pad characters to the PDU.

However, appellant asserts that Scott odes not disclose using a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell.

Claim Construction for the argued limitation

The claim, in part, recites:

"…where **the header cell comprises a header and packet data information**…"

"…a counter… to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes **after the header has been removed from the header cell…"**

In other words, the functionality discloses a counter which is configured to determine whether the remaining portion of the header cell, i.e. packet data information, contains a multiple of a predetermined number of bytes after the header has been removed from the header cell.

Stated another way, the counter counts the packet data information, similar to Scott's counter counting the user data PDU, left after the header has been removed from the header cell.

As such, Scott does teach and disclose the counter as in claim 1.

In the Brief, for example: pg. 16, appellant asserts that:

"Furthermore, advisory action…Instead, the advisory action states…However, this is no more than another admission that Scott does not, in fact, count the header cell of any packet disclosed therein…"

In response to appellant's assertions, Examiner disagrees merely because appellant is misinterpreting the examiner's obviousness analysis.

Examiner's analysis was to show the appellant that if the counter in Scott can count the user pdu portion of the data packet to determine whether the packet contains a multiple of 48 octets**, then the counter can be adopted**, for counting the header cell after the header has been removed, i.e. the remaining data portion, in order to determine whether to add the pad characters or not.

b. The rejection falls short of establishing a prima facie case of obviousness (The Brief, pg. 17).

In response to argument [b], Examiner respectfully disagrees.

In the Brief, for example, pg. 17, appellant asserts that:

"…In the latter case, a proper rejection would need to provide an explanation of why, for example, one of ordinary skill in the art would have used the counter of Scott in a manner that is admittedly not disclosed in Scott and in a way that the counter is, at best "capable of' being used…"

It appears appellant is arguing that there is no reason, suggestion and/or motivation for the combination.

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, as explicitly acknowledged by the appellant, one of ordinary skilled in the art would have been motivated because it would have aligned the data packets and/or cells by counting the remaining portion of the cell or packet after the header has been removed, and inserting the pad bytes when its determined that the remaining portion is not a multiple number of bytes (See Scott: col. 10 L40-50 and Thompson: col. 1 L25-38).

The rationale and/or "explanation of why one of ordinary skill in the art would have used the counter of Scott in a manner…" as argued by the appellant can be found in KSR Ruling.

See KSR International Co. v. Teleflex Inc., 550 U.S. ___,___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit, and **MPEP 2143.** [EXEMPLARY RATIONALES:

Exemplary rationales that may support a conclusion of obviousness include:
(A) Combining prior art elements according to known methods to yield predictable results;
(B) Simple substitution of one known element for another to obtain predictable results;
(C) Use of known technique to improve similar devices (methods, or products) in the same way;
(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
(E) "Obvious to try" – choosing from a finite number of identified, predictable;
(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. See MPEP § 2143 for a discussion of the rationales listed above along with examples illustrating how the cited rationales may be used to support a finding of obviousness].

For example: In this case, Scott and Thompson provide an explicit suggestion and/or motivation as set forth above. Rationale A, C and D also applies.

c. Further, as…the rejection fails further because Thompson explicitly teaches away the proposed combination (The Brief, pg. 19).

In response to argument [c], Examiner respectfully disagrees.

In the Brief, for example: pg. 18, appellant asserts:

"Thompson discloses…However, in the very next paragraph, Thompson further discloses...based on the value of the destination service access point, the network adaptor places a number of pad bytes in the network link header...Thus, Thompson specifically discloses that the insertion of pad bytes within a header is based on a destination address of the header. Such a disclosure…teaches away…from the proposed modification of using the counter…"

First, the referred very next paragraph is in the "Summary of the Invention".

Secondly, it appears that appellant is misinterpreting the rejection, the modification and/or the prior art.

As noted by the appellant, "the hardware in Thompson will insert between 0 and 3 pad bytes…based on the value found in the destination SAP field…"

In other words, Thompson discloses using the destination address of the header to first determine the destination protocol, and then determining **the number of pad bytes** to add in order to align the cell or packet according to the destination.

Initially, Thompson discloses that the network adaptor performs three operations, e.g. col. 3 L34 to col. 4 L42. It should be noted that the second operation involves counting. The counting must be performed initially to determine how many bytes are contained in the remaining portion of the data packet or cell.

For example: In an event the destination protocol requires frame size of 48. The hardware determines this size number and based on the number of octet in the frame, the hardware will determine the number of pad bytes to add.

Moreover, Thompson does not criticize, discredit, or other wise discourage the usage of counter to count the remaining portion of the packet. See MPEP 2141.02 (VI) and In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004) [However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed…."].

As such, the modification will not and does not render prior art unsatisfactory for its intended purpose. Stated another way, Thompson-Scott-Parruck will still operate to align the headers and/or data packets by inserting the pad bytes in the data packets.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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